# UDEF IDs and OAGI BODs

## *as elements of an Aerospace Industry*

## *Standard eBusiness Architecture*

A business scenario using

Universal Data Element Framework IDs

and

Open Applications Group, Inc. Business Object Documents

# Presentation Objective

- To create a small pilot effort to model an end-to-end procurement making use of advanced technologies (data transfer via XML transactions)
  - This model procurement would utilize Universal Data Element Framework (UDEF) IDs and Open Applications Group, Inc. Business Object Documents (BODs)

# Aerospace Industry Marketplace

All eBusiness communications and transactions take place between two broadly defined entities –

**Buyers** and
**Sellers**

# - *Contracts* -

- Most **Buyers** and **Sellers** exchange goods and services for money via mutually binding contracts
  - In fact, many companies in the Aerospace Industry are known as Defense *Contractors*
- Contracts may be known as Orders, Purchase Orders, Purchase Agreements, or other terms, but all the terms reference a common semantic meaning

# Contract Life Cycle

- The life cycle of a contract may be represented by a series of hierarchical, sequential processes divided into 9 phases
  - General Information (to establish identity); and
  - 8 Sequential Contract Process Steps

# Contract Phases

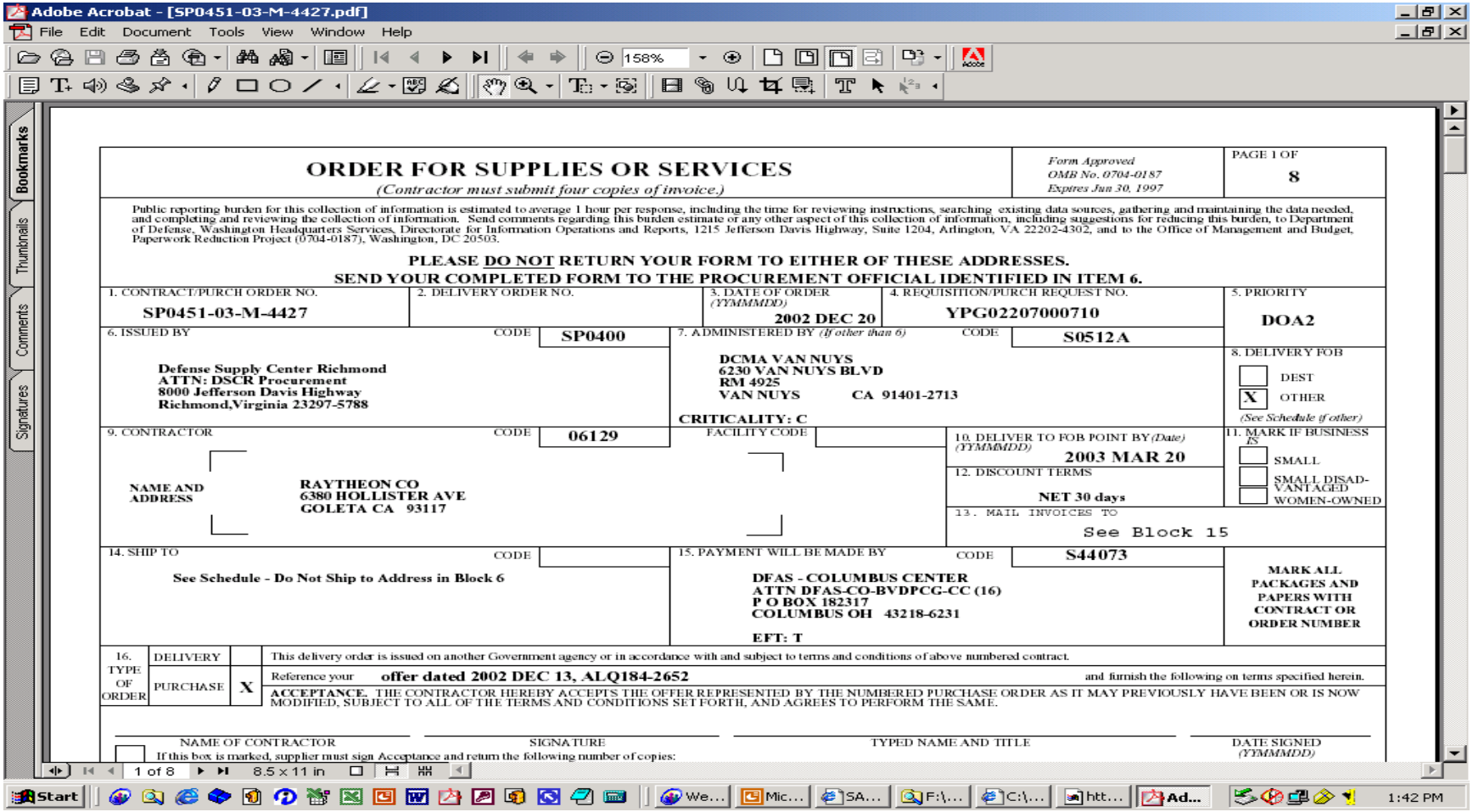
0 – General Information
1 – Requirements
2 – Solicitation
3 – Proposal/Evaluation
4 – Contract Award
5 – Contract Performance
6 – Delivery
7 – Invoicing/Payment
8 – Contract Closure

# Universal Data Element Framework (UDEF) IDs

- UDEF IDs will provide a common data dictionary for most business data
  - Example: Requisition Number, Part Number, Contract Number, Shipment Number, etc.
- Contract Data – UDEF IDs will provide consistent data labels throughout the entire procurement process…

# from the Order…

(shown: Electronic Document Access web-based Government Contract)



Adobe Acrobat - [SP0451-03-M-4427.pdf]

File Edit Document Tools View Window Help

**ORDER FOR SUPPLIES OR SERVICES**

*(Contractor must submit four copies of invoice.)*

Form Approved OMB No. 0704-0187 Expires Jun 30, 1997

PAGE 1 OF 8

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0187), Washington, DC 20503.

**PLEASE DO NOT RETURN YOUR FORM TO EITHER OF THESE ADDRESSES.**
**SEND YOUR COMPLETED FORM TO THE PROCUREMENT OFFICIAL IDENTIFIED IN ITEM 6.**

| 1. CONTRACT/PURCH ORDER NO. | 2. DELIVERY ORDER NO. | 3. DATE OF ORDER (YYMMMDD) | 4. REQUISITION/PURCH REQUEST NO. | 5. PRIORITY |
|---|---|---|---|---|
| SP0451-03-M-4427 | | 2002 DEC 20 | YPG02207000710 | DOA2 |

6. ISSUED BY — CODE SP0400

Defense Supply Center Richmond
ATTN: DSCR Procurement
8000 Jefferson Davis Highway
Richmond,Virginia 23297-5788

7. ADMINISTERED BY *(If other than 6)* — CODE S0512A

DCMA VAN NUYS
6230 VAN NUYS BLVD
RM 4925
VAN NUYS CA 91401-2713

CRITICALITY: C

8. DELIVERY FOB
[ ] DEST
[X] OTHER
*(See Schedule if other)*

9. CONTRACTOR — CODE 06129 — FACILITY CODE

NAME AND ADDRESS
RAYTHEON CO
6380 HOLLISTER AVE
GOLETA CA 93117

10. DELIVER TO FOB POINT BY *(Date)* (YYMMMDD): 2003 MAR 20

11. MARK IF BUSINESS IS
[ ] SMALL
[ ] SMALL DISAD-VANTAGED
[ ] WOMEN-OWNED

12. DISCOUNT TERMS: NET 30 days

13. MAIL INVOICES TO: See Block 15

14. SHIP TO — CODE

See Schedule - Do Not Ship to Address in Block 6

15. PAYMENT WILL BE MADE BY — CODE S44073

DFAS - COLUMBUS CENTER
ATTN DFAS-CO-BVDPCG-CC (16)
P O BOX 182317
COLUMBUS OH 43218-6231

EFT: T

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER: DELIVERY [ ] PURCHASE [X]

This delivery order is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract.

Reference your **offer dated 2002 DEC 13, ALQ184-2652** and furnish the following on terms specified herein.

**ACCEPTANCE.** THE CONTRACTOR HEREBY ACCEPTS THE OFFER REPRESENTED BY THE NUMBERED PURCHASE ORDER AS IT MAY PREVIOUSLY HAVE BEEN OR IS NOW MODIFIED, SUBJECT TO ALL OF THE TERMS AND CONDITIONS SET FORTH, AND AGREES TO PERFORM THE SAME.

NAME OF CONTRACTOR | SIGNATURE | TYPED NAME AND TITLE | DATE SIGNED (YYMMMDD)

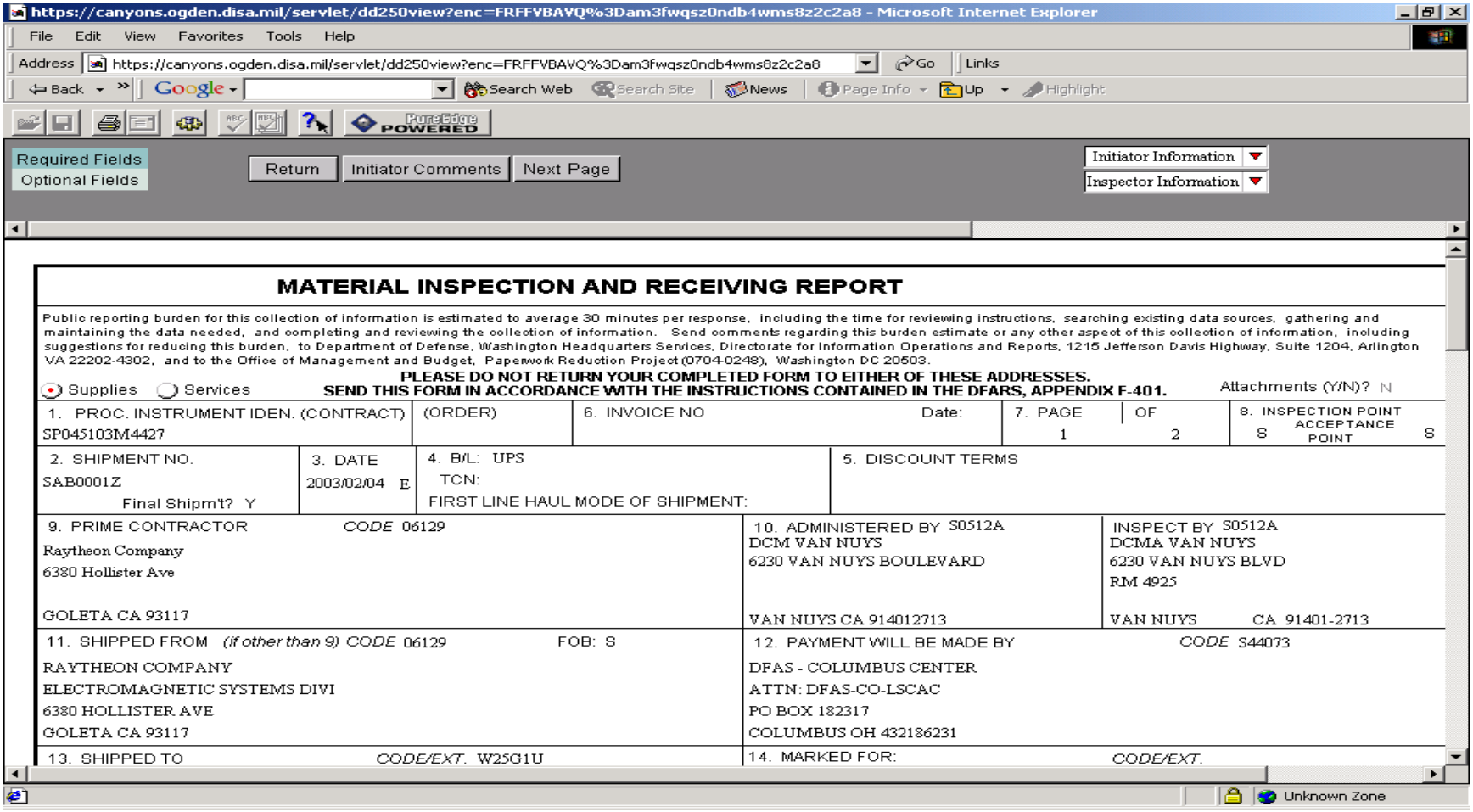
[ ] If this box is marked, supplier must sign Acceptance and return the following number of copies:

1 of 8 8.5 x 11 in

Start 1:42 PM

# ...to the Delivery

## (shown: WAWF web-based Acceptance Document)

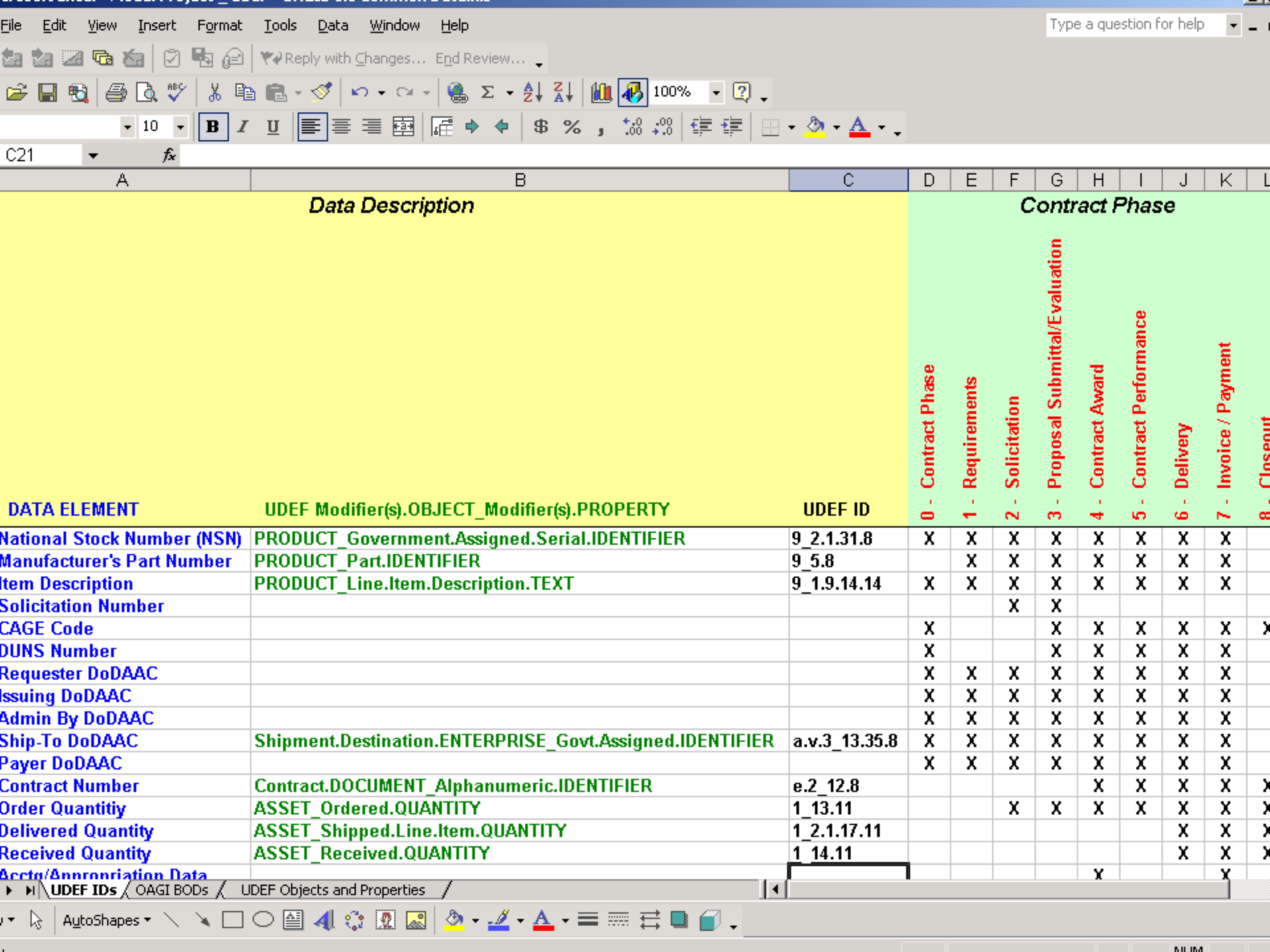

https://canyons.ogden.disa.mil/servlet/dd250view?enc=FRFFVBAVQ%3Dam3fwqsz0ndb4wms8z2c2a8 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Address https://canyons.ogden.disa.mil/servlet/dd250view?enc=FRFFVBAVQ%3Dam3fwqsz0ndb4wms8z2c2a8
Go Links
Back Google Search Web Search Site News Page Info Up Highlight
PureEdge POWERED
Required Fields
Optional Fields
Return
Initiator Comments
Next Page
Initiator Information
Inspector Information
MATERIAL INSPECTION AND RECEIVING REPORT
Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0248), Washington DC 20503.
PLEASE DO NOT RETURN YOUR COMPLETED FORM TO EITHER OF THESE ADDRESSES.
SEND THIS FORM IN ACCORDANCE WITH THE INSTRUCTIONS CONTAINED IN THE DFARS, APPENDIX F-401.
Supplies Services
Attachments (Y/N)? N
1. PROC. INSTRUMENT IDEN. (CONTRACT) SP045103M4427
(ORDER)
6. INVOICE NO
Date:
7. PAGE 1 OF 2
8. INSPECTION POINT S ACCEPTANCE POINT S
2. SHIPMENT NO. SAB0001Z Final Shipm't? Y
3. DATE 2003/02/04 E
4. B/L: UPS TCN: FIRST LINE HAUL MODE OF SHIPMENT:
5. DISCOUNT TERMS
9. PRIME CONTRACTOR CODE 06129
Raytheon Company
6380 Hollister Ave
GOLETA CA 93117
10. ADMINISTERED BY S0512A
DCM VAN NUYS
6230 VAN NUYS BOULEVARD
VAN NUYS CA 914012713
INSPECT BY S0512A
DCMA VAN NUYS
6230 VAN NUYS BLVD
RM 4925
VAN NUYS CA 91401-2713
11. SHIPPED FROM (if other than 9) CODE 06129 FOB: S
RAYTHEON COMPANY
ELECTROMAGNETIC SYSTEMS DIVI
6380 HOLLISTER AVE
GOLETA CA 93117
12. PAYMENT WILL BE MADE BY CODE S44073
DFAS - COLUMBUS CENTER
ATTN: DFAS-CO-LSCAC
PO BOX 182317
COLUMBUS OH 432186231
13. SHIPPED TO CODE/EXT. W25G1U
14. MARKED FOR: CODE/EXT.
Unknown Zone

# Different Names for the Same Data

- In the preceding Form Based examples, the data required is known by different names
- DD1155 Order for Supplies or Services
  - Block 1 is “Contract/Purchase Order No.”
- DD250 Material Inspection & Receiving Report
  - Block 1 is “Proc. Instrument Iden. (Contract)”
- Information contained in both “fields”
  - SP045103M4427

# The UDEF ID Solution

- UDEF IDs are comprised of an Object and a Property divided by an underscore
- The UDEF ID for Contract Number is “e.2_12.8” which is
  - Object: Contract Document
  - Property: Alphanumeric Identifier

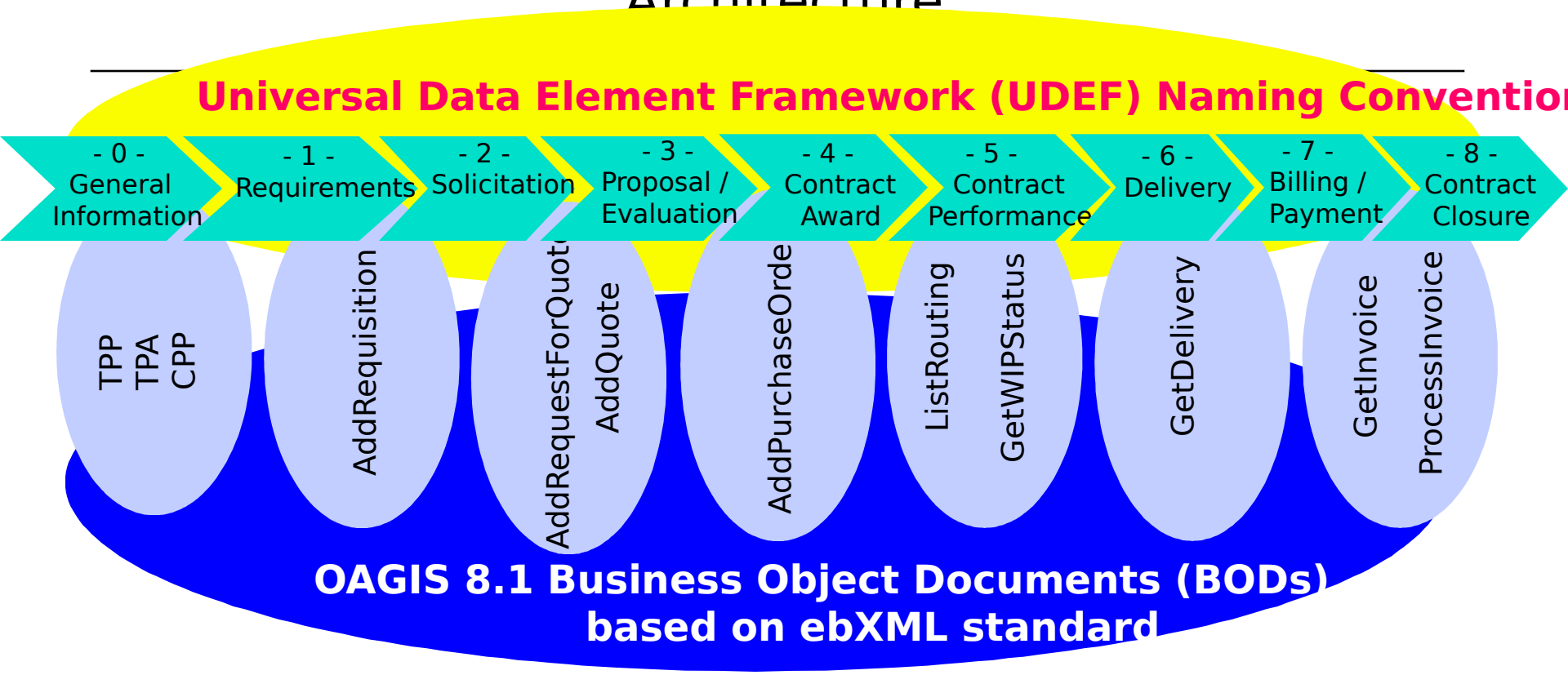

File Edit View Insert Format Tools Data Window Help
Type a question for help
Reply with Changes... End Review...
100%
10
C21
A B C D E F G H I J K L
Data Description
Contract Phase
DATA ELEMENT
UDEF Modifier(s).OBJECT_Modifier(s).PROPERTY
UDEF ID
0 - Contract Phase
1 - Requirements
2 - Solicitation
3 - Proposal Submittal/Evaluation
4 - Contract Award
5 - Contract Performance
6 - Delivery
7 - Invoice / Payment
8 - Closeout
National Stock Number (NSN) PRODUCT_Government.Assigned.Serial.IDENTIFIER 9_2.1.31.8 X X X X X X X X
Manufacturer's Part Number PRODUCT_Part.IDENTIFIER 9_5.8 X X X X X X X
Item Description PRODUCT_Line.Item.Description.TEXT 9_1.9.14.14 X X X X X X X X
Solicitation Number X X
CAGE Code X X X X X X X X
DUNS Number X X X X X X X
Requester DoDAAC X X X X X X X X
Issuing DoDAAC X X X X X X X X
Admin By DoDAAC X X X X X X X X
Ship-To DoDAAC Shipment.Destination.ENTERPRISE_Govt.Assigned.IDENTIFIER a.v.3_13.35.8 X X X X X X X X
Payer DoDAAC X X X X X X X X
Contract Number Contract.DOCUMENT_Alphanumeric.IDENTIFIER e.2_12.8 X X X X
Order Quantitiy ASSET_Ordered.QUANTITY 1_13.11 X X X X X
Delivered Quantity ASSET_Shipped.Line.Item.QUANTITY 1_2.1.17.11 X X X
Received Quantity ASSET_Received.QUANTITY 1_14.11 X X X
Acctg/Appropriation Data X X
UDEF IDs OAGI BODs UDEF Objects and Properties
AutoShapes

# Open Application Group Integration Specification (OAGIS) 8.1

- OAGIS 8.1 contains Business Object Documents (BODs) that include Verbs (e.g. Get, List, Process) and Nouns (Purchase Order, Invoice, etc.)
- It also contains XML Schema, constraint XSL, and example XML documents
- "Content Focused" (from OAGI presentation)
  - "ebXML is the envelope / OAGIS is the letter"
- Learn more at http://www.openapplications.org

# Here's how it looks with all the pieces put together...

# Proposed Aerospace Industry Standard eBusiness Architecture




UDEF – Use the same name for the same data element (e.g. Contract Number)

across the entire Contract Life Cycle

OAG BODs – Use established XML schema and documents (and extend where

necessary) to achieve rapid e-commerce capability

# DoD Business Management Modernization Program (BMMP)

- In July, 2001, the Secretary of Defense established the Business Management Modernization Program (BMMP) to transform and modernize the Department of Defense (DoD) business and Financial Systems
- This initiative has been designated as one of the top ten reform priorities for the Department
  - The above comments are from the BMMP Transition Plan dated 6 June 2003.

# DoD Business Management Modernization Program (BMMP)

- Seven BMMP Domains
  - Acquisition (ACQ)
  - Finance, Accounting Operations & Financial Mgmt (ACC/FIN)
  - Human Resources Management (HRM)
  - Installations & Environment (I&E)
  - Logistics (LOG)
  - Strategic Planning & Budgeting (SPB)
  - Technical Infrastructure (TI)

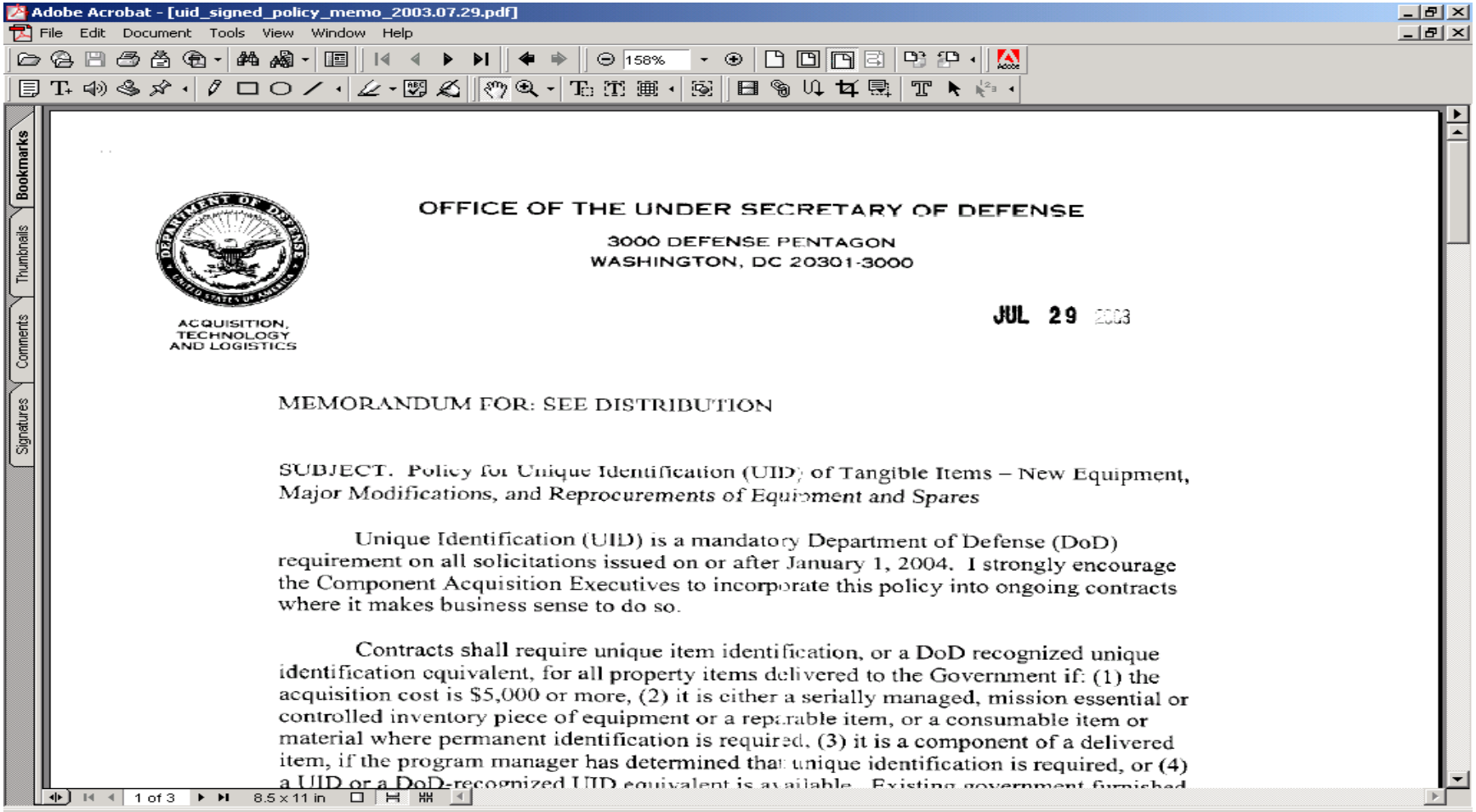
# DoD Business Management Modernization Program (BMMP)

- Relevant Domains for this presentation and their designated Owners
  - Acquisition (ACQ)
    - Ms. Deidre Lee
  - Finance, Acctg Ops & Financial Mgmt (ACC/FIN)
    - Ms. JoAnn Boutelle
  - Logistics (LOG)
    - Ms. Diane Morales
  - Technical Infrastructure (TI)
    - Ms. Priscilla Guthrie

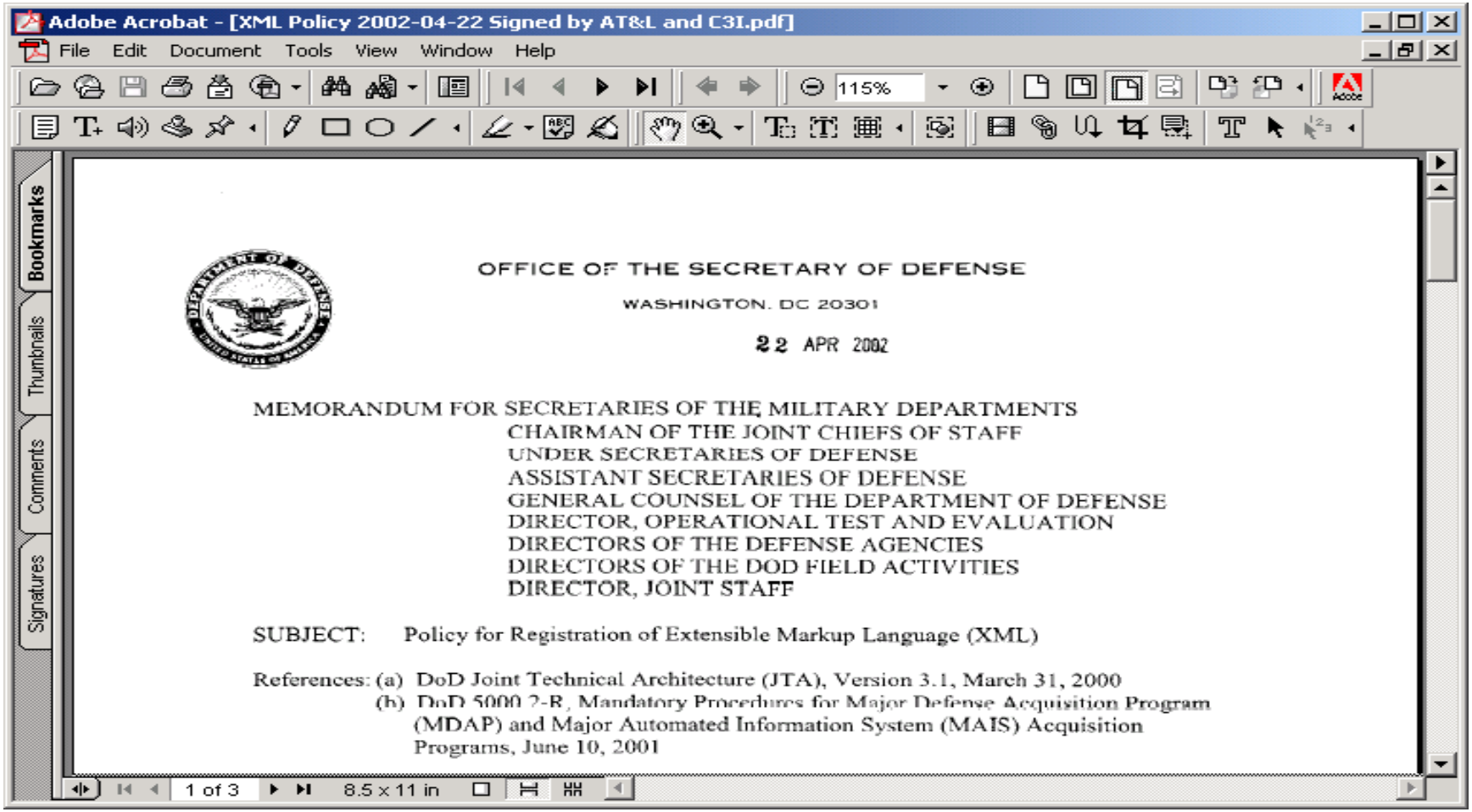
# DoD Business Management Modernization Program (BMMP)

- Two relevant policies
  - Unique Item Identification (UID)
    - Policy Memorandum signed 7/29/2003
  - XML Registration
    - Policy Memorandum signed 4/22/2002

# Unique Item Identification (UID)


Adobe Acrobat - [uid_signed_policy_memo_2003.07.29.pdf]
File Edit Document Tools View Window Help
158%
Bookmarks
Thumbnails
Comments
Signatures
OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000
ACQUISITION, TECHNOLOGY AND LOGISTICS
JUL 29 2003
MEMORANDUM FOR: SEE DISTRIBUTION
SUBJECT: Policy for Unique Identification (UID) of Tangible Items – New Equipment, Major Modifications, and Reprocurements of Equipment and Spares
Unique Identification (UID) is a mandatory Department of Defense (DoD) requirement on all solicitations issued on or after January 1, 2004. I strongly encourage the Component Acquisition Executives to incorporate this policy into ongoing contracts where it makes business sense to do so.
Contracts shall require unique item identification, or a DoD recognized unique identification equivalent, for all property items delivered to the Government if: (1) the acquisition cost is $5,000 or more, (2) it is either a serially managed, mission essential or controlled inventory piece of equipment or a reparable item, or a consumable item or material where permanent identification is required, (3) it is a component of a delivered item, if the program manager has determined that unique identification is required, or (4) a UID or a DoD-recognized UID equivalent is available. Existing government furnished
1 of 3
8.5 x 11 in

# XML Registration


Adobe Acrobat - [XML Policy 2002-04-22 Signed by AT&L and C3I.pdf]
File Edit Document Tools View Window Help
115%
Bookmarks
Thumbnails
Comments
Signatures
OFFICE OF THE SECRETARY OF DEFENSE
WASHINGTON, DC 20301
22 APR 2002
MEMORANDUM FOR SECRETARIES OF THE MILITARY DEPARTMENTS
CHAIRMAN OF THE JOINT CHIEFS OF STAFF
UNDER SECRETARIES OF DEFENSE
ASSISTANT SECRETARIES OF DEFENSE
GENERAL COUNSEL OF THE DEPARTMENT OF DEFENSE
DIRECTOR, OPERATIONAL TEST AND EVALUATION
DIRECTORS OF THE DEFENSE AGENCIES
DIRECTORS OF THE DOD FIELD ACTIVITIES
DIRECTOR, JOINT STAFF
SUBJECT: Policy for Registration of Extensible Markup Language (XML)
References: (a) DoD Joint Technical Architecture (JTA), Version 3.1, March 31, 2000
(b) DoD 5000.2-R, Mandatory Procedures for Major Defense Acquisition Program (MDAP) and Major Automated Information System (MAIS) Acquisition Programs, June 10, 2001
1 of 3
8.5 x 11 in

Data Element Registry - AVCAL UI CODE V1 - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://diides.ncr.disa.mil/dereg/user/search/displaySDE.cfm?id=117208
Google Search Web Search Site Options Links

Data Element Registry Home
What's New
Briefings & Documentation
Search Data Elements
Data Element Inventory
Download Access DB
Info Desk
Registration
Reports
Subscriptions
MetaData Registry Home
COE Home

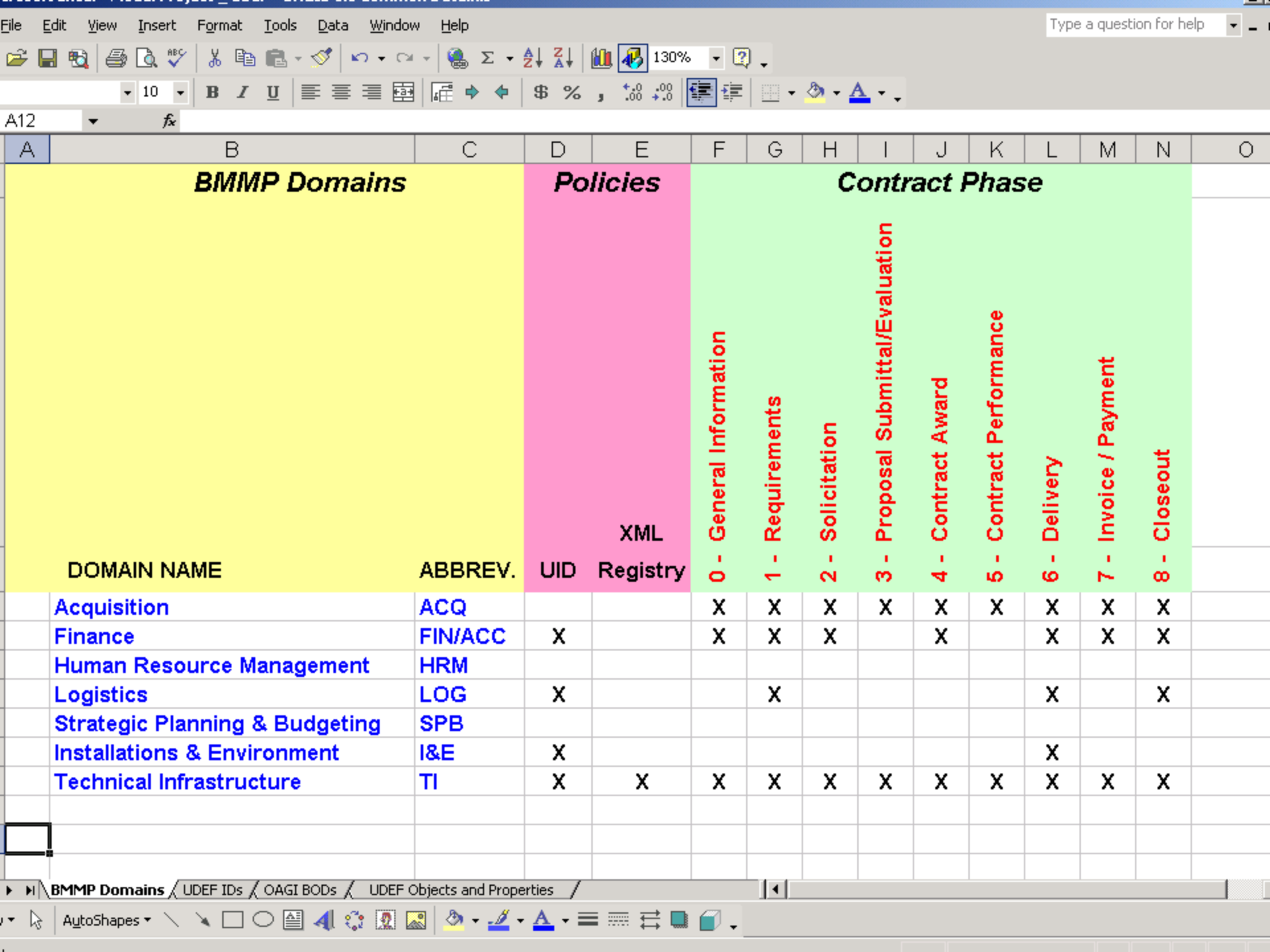
# AVCAL UI CODE V1

**Definition:** UNIT OF ISSUE
**Status:** Development
**Type:** Standard Data Element
**DDDS SDE Counter ID:** 62124
**DDDS PWN Counter ID:** 19055
**DDDS GE Counter ID:** 4
**Security:** Unclassified
**Classification:** Unclassified
**Submit Date:** 19 February 2001
**Last Update Date:**
**Approval Date:**
**Archived Date:**
**Comment:**

**Prime Word Name:** AVCAL
**Prime Word Status:** Development
**Prime Word Version:** 1

**Generic Element Name:** CODE
**Generic Element Status:** Approved
**Generic Element Version:** 1

Internet



File Edit View Insert Format Tools Data Window Help

Type a question for help

130%

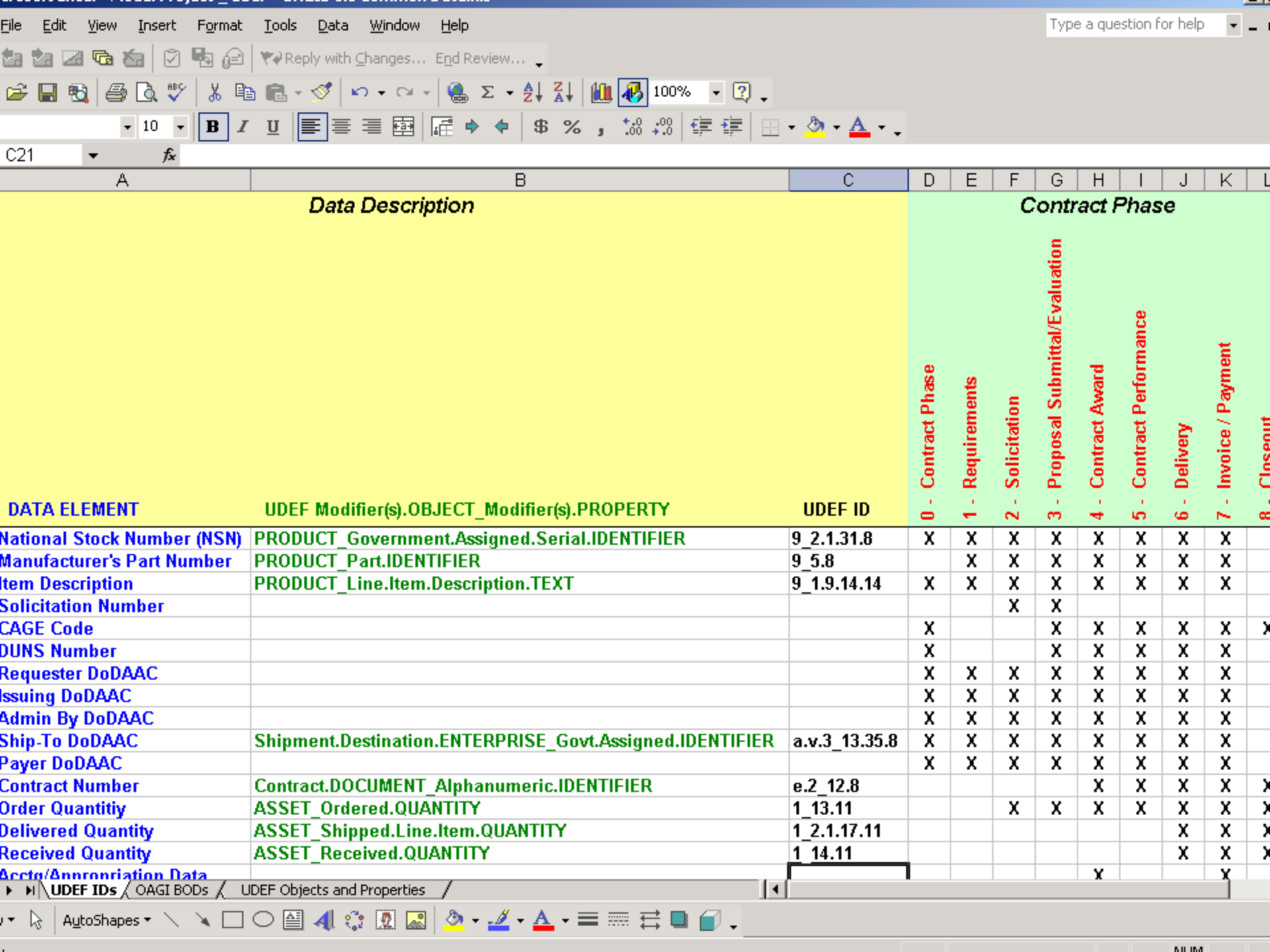
10

A12

| | BMMP Domains | | Policies | | Contract Phase | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | DOMAIN NAME | ABBREV. | UID | XML Registry | 0 - General Information | 1 - Requirements | 2 - Solicitation | 3 - Proposal Submittal/Evaluation | 4 - Contract Award | 5 - Contract Performance | 6 - Delivery | 7 - Invoice / Payment | 8 - Closeout |
| | Acquisition | ACQ | | | X | X | X | X | X | X | X | X | X |
| | Finance | FIN/ACC | X | | X | X | X | | X | | X | X | X |
| | Human Resource Management | HRM | | | | | | | | | | | |
| | Logistics | LOG | X | | | X | | | | | X | | X |
| | Strategic Planning & Budgeting | SPB | | | | | | | | | | | |
| | Installations & Environment | I&E | X | | | | | | | | X | | |
| | Technical Infrastructure | TI | X | X | X | X | X | X | X | X | X | X | X |

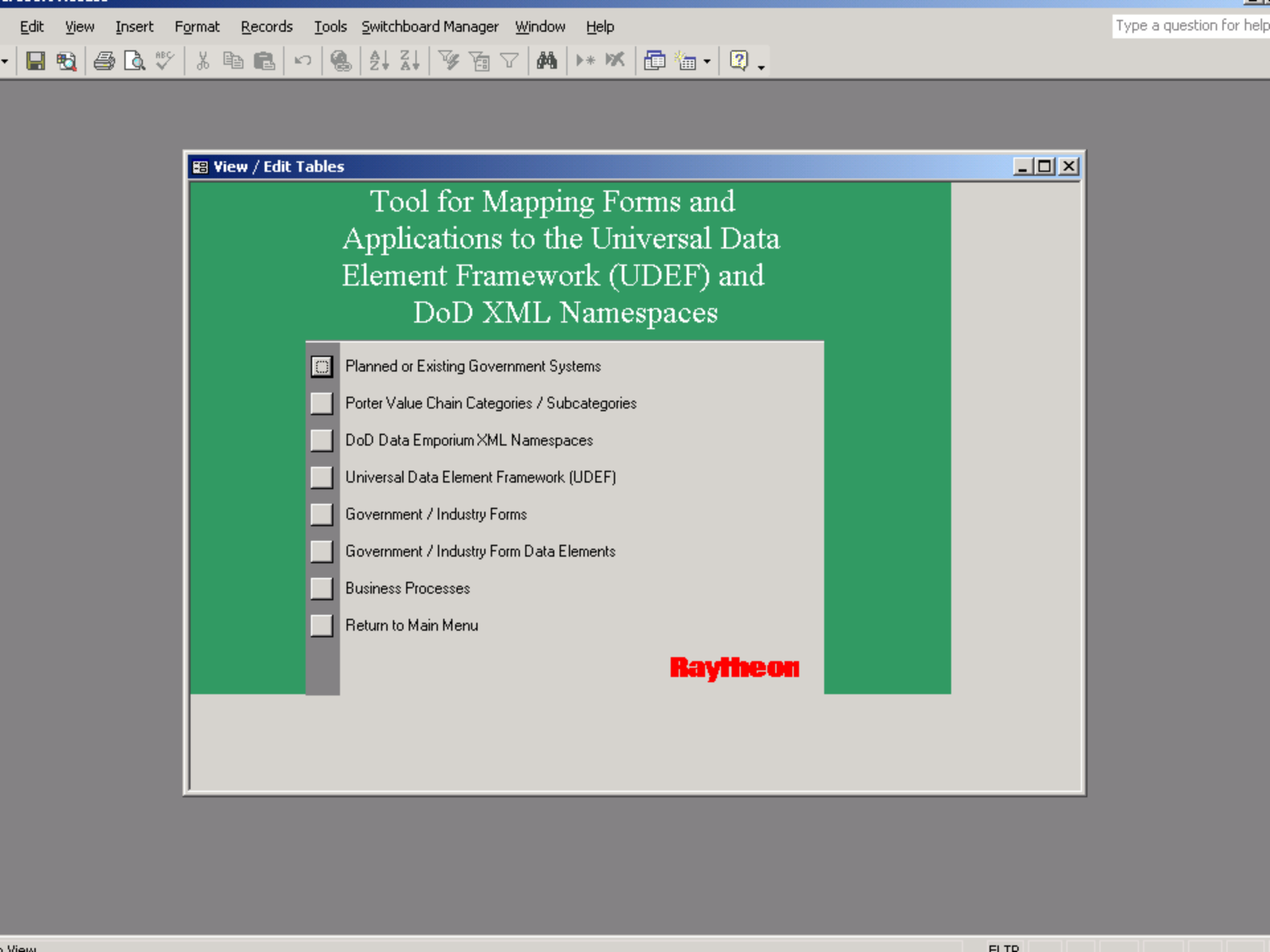
BMMP Domains | UDEF IDs | OAGI BODs | UDEF Objects and Properties

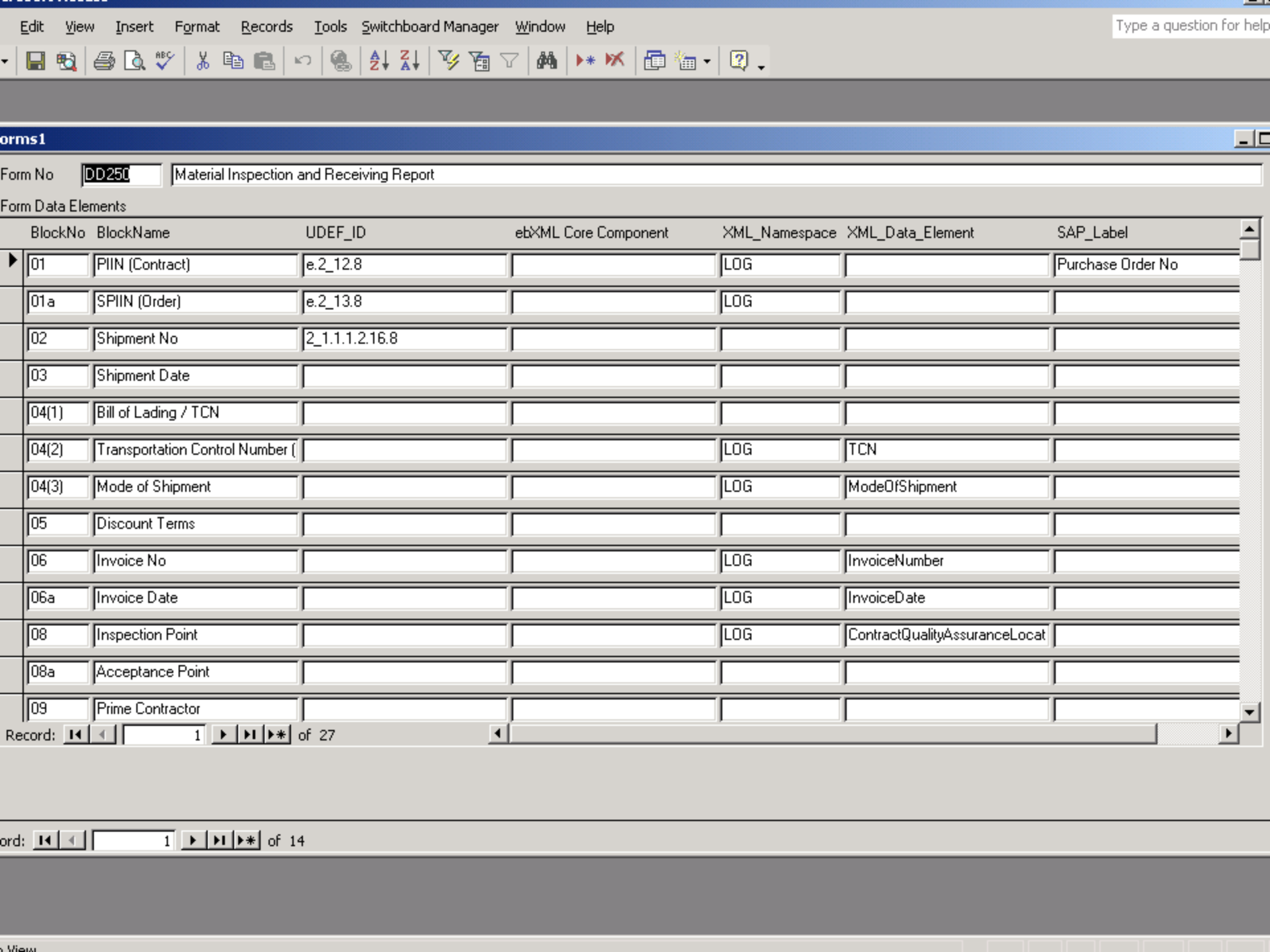
AutoShapes


File Edit View Insert Format Tools Data Window Help
Type a question for help
Reply with Changes... End Review...
100%
10
C21
A B C D E F G H I J K L
Data Description
Contract Phase
DATA ELEMENT
UDEF Modifier(s).OBJECT_Modifier(s).PROPERTY
UDEF ID
0 - Contract Phase
1 - Requirements
2 - Solicitation
3 - Proposal Submittal/Evaluation
4 - Contract Award
5 - Contract Performance
6 - Delivery
7 - Invoice / Payment
8 - Closeout
National Stock Number (NSN) PRODUCT_Government.Assigned.Serial.IDENTIFIER 9_2.1.31.8 X X X X X X X X
Manufacturer's Part Number PRODUCT_Part.IDENTIFIER 9_5.8 X X X X X X X
Item Description PRODUCT_Line.Item.Description.TEXT 9_1.9.14.14 X X X X X X X X
Solicitation Number X X
CAGE Code X X X X X X X X
DUNS Number X X X X X X X
Requester DoDAAC X X X X X X X X
Issuing DoDAAC X X X X X X X X
Admin By DoDAAC X X X X X X X X
Ship-To DoDAAC Shipment.Destination.ENTERPRISE_Govt.Assigned.IDENTIFIER a.v.3_13.35.8 X X X X X X X X
Payer DoDAAC X X X X X X X X
Contract Number Contract.DOCUMENT_Alphanumeric.IDENTIFIER e.2_12.8 X X X X
Order Quantitiy ASSET_Ordered.QUANTITY 1_13.11 X X X X X
Delivered Quantity ASSET_Shipped.Line.Item.QUANTITY 1_2.1.17.11 X X X
Received Quantity ASSET_Received.QUANTITY 1_14.11 X X X
Acctg/Appropriation Data X X
UDEF IDs OAGI BODs UDEF Objects and Properties
AutoShapes

# Remember the Paper Forms

- The first thing required to become “paperless” is to start out “paperful.”
  - Gather information from the legacy forms-based processes
- Roughly speaking, the UDEF IDs represent the blocks on the forms and OAGIS 8.1 BODs represent the entire form as well as its exchange with another party


Edit View Insert Format Records Tools Switchboard Manager Window Help
Type a question for help
View / Edit Tables
Tool for Mapping Forms and Applications to the Universal Data Element Framework (UDEF) and DoD XML Namespaces
Planned or Existing Government Systems
Porter Value Chain Categories / Subcategories
DoD Data Emporium XML Namespaces
Universal Data Element Framework (UDEF)
Government / Industry Forms
Government / Industry Form Data Elements
Business Processes
Return to Main Menu
Raytheon


Edit View Insert Format Records Tools Switchboard Manager Window Help
Type a question for help
orms1
Form No DD250 Material Inspection and Receiving Report
Form Data Elements
BlockNo BlockName UDEF_ID ebXML Core Component XML_Namespace XML_Data_Element SAP_Label
01 PIIN (Contract) e.2_12.8 LOG Purchase Order No
01a SPIIN (Order) e.2_13.8 LOG
02 Shipment No 2_1.1.1.2.16.8
03 Shipment Date
04(1) Bill of Lading / TCN
04(2) Transportation Control Number ( LOG TCN
04(3) Mode of Shipment LOG ModeOfShipment
05 Discount Terms
06 Invoice No LOG InvoiceNumber
06a Invoice Date LOG InvoiceDate
08 Inspection Point LOG ContractQualityAssuranceLocat
08a Acceptance Point
09 Prime Contractor
Record: 1 of 27
ord: 1 of 14

# Recommended "Next Steps"

- Create small pilot effort to model end-to-end procurement of small spare supply unit (e.g. cable assembly)
- Work with appropriate BMMP Domains to inventory all forms and processes currently in use to transfer data
- Create and register UDEF IDs for all the necessary blocks
  - Make sure not to create redundant UDEF IDs for different form blocks which have the same semantic meaning (e.g. "PIIN" vs. "Purchase Order No.")
- Work with OAGI to create necessary extensions to existing Business Object Documents

# Questions?